

## HISTOPATHOLOGICAL CHANGES IN JOINTS DURING DIFFERENT PHASES OF ZYMOSAN INDUCED ARTHRITIS – FROM BASIC VARIATIONS TO SOME MOLECULAR PATHWAYS

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**Aim:** Zymosan induced arthritis (ZIA) is a model that resembles rheumatoid arthritis (RA) in human. It is developed in 1977 by Keystone and is widely used up to date. However, there is no full and combined investigation that explains all of the changes which occur after arthritis induction. It would be useful such to be conducted in order to be evaluated the full spectrum of pathological changes in the joint during ZIA. This was the purpose of the present study.

**Materials and methods:** Arthritis was induced as described by Keystone (intra-articular injection of 40 mg/kg, zymosan suspension). Ankle joints were dissected and used for histopathological examination at days 7, 18, 30 and 56 resembling the early, active, chronic and late chronic phase of the inflammation. Changes were evaluated using combined histopathological system as described in materials and methods.

**Results:** Our results showed that joint destruction starts with inflammation of synovial tissue and bone marrow (day 7), which develops into bone and cartilage changes (day 18) and leads to generalized joint destruction in the late stages of inflammation (days 30, 56).

**Conclusion:** Our results show that histopathological changes can be divided to three major stages, which have unique characteristics. ZIA is a convenient model for investigating RA and the changes leading to generalized bone destruction are of major importance for researchers.